October 22, 2003

Ms. Phyllis Hockett
Indiana Department of Transportation
100 North Senate
Room N755
Indianapolis, IN 46204-2249

Re: Registered Construction and Operation Status, **R 167-13753-00107**

Dear Ms. Hockett:

The application from Indiana Department of Transportation, received on December 5, 2000, has been reviewed. Based on the data submitted and the provisions in Sections 1 and 2 of 326 IAC 2-1, it has been determined that the following testing facility, to be located at 5693 E. Sony Drive, Terre Haute, Indiana, 47802, is classified as registered:

(a) Coarse and Fine Aggregate Testing Facility,
(b) Three (3) systems for Asphalt Extractions,
(c) Five (5) natural gas-fired furnaces for drying aggregate with a combined maximum heat input capacity of 0.479 MM BTU/hr, and
(d) Five (5) natural gas-fired hot plate type heaters with a combined maximum heat input capacity of 1.845 MM BTU/Hr. Each hot plate heater has two (2) burner units.

Pursuant to 326 IAC 6-3-2 (Particulate emissions limitations), the five (5) furnaces shall each be limited to 0.551 pounds per hour.

Any change or modification which may increase the potential VOC emissions to twenty-five (25) tons per year or more from the equipment covered in this registration must be approved by Vigo County Air Pollution Control (VCAPC) and the Indiana Department of Environmental Management (IDEM) before such change may occur.

Sincerely,

Original Signed By Goerge M. Needham
George M. Needham
Director
Vigo County Air Pollution Control

SBS
cc:
Winter Bottum, IDEM
Mindy Hahn, IDEM

Indiana Department of Environmental Management
Office of Air Quality
Vigo County Air Pollution Control

Technical Support Document (TSD) for a for a Registration Renewal

Source Background and Description

Source Name:	Indiana Department of Transportation
Source Location:	5693 E. Sony Drive, Terre Haute, IN 47802
County:	Vigo
Registration No.:	R167-13753-00107
SIC Code :	1611 and 1622
Permit Reviewer:	Scott Sines

Vigo County Air Pollution Control has reviewed an application for a registration renewal pursuant to 326 IAC 2-5.5-2 from the Indiana Department of Transportation relating to the operation of:

(a) Three (3) Asphalt Extraction Systems,
(b) One (1) Coarse and Fine Aggregate Testing System,
(c) Five (5) natural gas-fired furnaces with a combined heat input of 0.479 MM BTU/hr, and
(d) Five (5) natural gas-fired hot plate type heaters with a combined heat input of 1.845 MM BTU/hr.

Recommendation

The staff recommends to the Commissioner that the construction and operation be approved. This recommendation is based on the following facts and conditions:

Information, unless otherwise stated, used in this review was derived from the application and additional information submitted by the applicant.

An application for the purposes of this review was received on December 5, 2000.

Total Unrestricted Potential Emissions

See attached spreadsheet(s) for detailed calculations (pages 1 - 2).

Pollutant	Potential to Emit (tpy)
PM/PM-10	1.14
SO_2	0.006
NO_x	1.018
VOC	18.58
CO	0.214

Potential emissions (as defined in the Indiana Rule) of VOC are less than 25 tons per year, but greater than 5 tons per year. Therefore, pursuant to 326 IAC 2-5.5, a registration is required.

County Attainment Status

The source is located in Vigo County.

Pollutant	Status
PM-10	attainment
SO_2	maintenance attainment
NO_2	attainment
Ozone	attainment
CO	attainment
Lead	attainment

(a) Volatile organic compounds (VOC) are precursors for the formation of ozone. Therefore, VOC emissions are considered when evaluating the rule applicability relating to the ozone standards. Vigo County has been designated as attainment or unclassifiable for ozone.

(b) Vigo County has been classified as attainment or unclassifiable for the other criteria pollutants. Therefore, VOC emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2. See the State Rule Applicability for the source section.

Federal Rule Applicability

(a) There are no New Source Performance Standards (NSPS)(326 IAC 12 and 40 CFR Part 60) applicable to this source.

(b) There are no National Emission Standards for Hazardous Air Pollutants (NESHAPs)(326 IAC 14 and 20 and 40 CFR Part 61 and 63) applicable to this source.

State Rule Applicability

326 IAC 6-1 (Particulate Emission Limitations for Nonattainment Areas)

The source has a P.M. potential to emit of less than one hundred (100) tons per year and actual emissions of less than 10 tons per year, therefore, 326 IAC 6-1-2 does not apply.

326 IAC 6-3-2 (Process Operations; Particulate emissions limitations)

Each of the five (5) aggregate drying furnaces has a maximum capacity of two (2) tests per day. Each test begins with a maximum of 100 pounds of aggregate, yielding a maximum of 1,000 pounds of aggregate tested per day. As each test takes 12 hours to accomplish, the maximum process weight rate is 41 pounds per hour (1,000 pounds per day/24 hours). Per the source's calculations each test loses 0.28 pounds of particulate per test for a maximum of 5.6 pounds per day, or a total of 2,044 pounds per year. At the maximum production rate of 41 pounds per hour the source is well below the 4,826.76 pounds per year allowed by this rule.

326 IAC 8-1-6 (General provisions relating to VOC rules: general reduction requirements for new facilities).

The VOC potential emissions of the asphalt extraction process and the combustion of natural gas in the heaters are less than 25 tons/yr (combined); therefore, 326 IAC 8-1-6 requirements do not apply. No other 326 IAC 8 rules apply.

Conclusion

The construction of this testing facility will be subject to the conditions of the attached proposed Registration No: 167-13753-00107.

Company Name:	Indiana Department of Transportation
Address City IN Zip:	5693 E. Sony Drive, Terre Haute, IN 47802
CP	167-13753
Plt ID:	167-00107
Reviewer:	Scott Sines
Date:	October 15, 2003

Asphalt Extraction

Data: From Indiana Department of Transportation

3	Number of Systems
842	ml of VOC emissions per extraction
7.15	pounds per gallon (density of solution)
1443	actual number of extractions at most used lab
217	actual number of days at most used lab
7.5	actual number of hours per day at most used lab

Calculations:

1.59	pounds of VOC per extraction(1)
0.89	extractions per hour(2)
12353	pounds of VOC per year per system(3)
6.18	tons of VOC per year per system(4)
18.53	tons of VOC per year(5)
4.23	pounds of VOC per hour(6)
101.5	pounds of VOC per day(7)

Methodology:

(1) - ml VOC lost * 0.001 L/ml * 0.001 m^3/L / 3.7854e-3 m^3/gal * density of solution (lbs/gal)
(2) - extractions per hour / (number of days * hours per day)
(3) - extractions per hour * 8760 hours per year *pounds of VOC per extraction
(4) - pounds of VOC per year per system / 2000 pounds per ton
(5) - number of systems * tons of VOC per year per system
(6) - tons of VOC per year * 2000 pounds per ton / 8760 hours per year
(7) - tons of VOC per hour * 24 hours per day

Coarse and Fine Aggregate Testing

Data: From Indiana Department of Transportation Flow Chart

5	furnaces each with a maximum capacity of 2 runs per day
0.28	maximum pounds lost on a test run
12	hours to perform a test run

Calculations:

0.233	pounds of PM (PM10 also) per hour (1)
1.021	tons of PM per year (2)
5.592	pounds of PM per day (3)

Methodology:

(1) - pounds lost/12 hours per run * 2 runs/ furnace * 5 furnaces
(2) - pounds of PM per hour * 8760 hours per year / 2000 pounds per ton
(3) - pounds of PM per hour * 24 hours per day

Also, all PM emissions assumed to be PM10 due to the nature of the operation.

Natural Gas Combustion Only

MM Btu/hr 0.3 - < 10

Commercial Heaters

15 heat sources (furnaces + hot plate type heaters) with a combined heat input of 2.3242 MM BTU/Hr

Heat Input Capacity MMBtu/hr	Potential Throughput MMCF/yr
2.3242	20.4

	Pollutant					
	PM	PM10	SO2	NOx	VOC	CO
Emission Factor in lb/MMCF	12.0	12.0	0.6	100.0	5.3	21.0
Potential Emission in tons/yr	0.122	0.122	0.006	1.018	0.054	0.214
Potential Emission in lbs/hr	0.028	0.028	0.001	0.232	0.012	0.049
Potential Emission in lbs/day	0.669	0.669	0.033	5.578	0.296	1.171

Methodology

MMBtu = 1,000,000 Btu
MMCF = 1,000,000 Cubic Feet of Gas
Emission Factors for NOx: uncontrolled = 100, Low Nox Burner = 17, Flue gas recirculation = 36
Emission Factors for CO: uncontrolled = 21, Low NOx Burner = 27, Flue gas recirculation = ND
Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,000 MMBtu
Emission Factors from AP 42, Chapter 1.4, Tables 1.4-1, 1.4-2, and 1.4-3, SCC #1-03-006-03
Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton

Total Potential Emissions

	Pollutant (in Tons per Year)					
Process	PM	PM10	SO2	NOx	VOC	CO
Asphalt Extraction					18.53	
Coarse and Fine Aggregate	1.02	1.02				
Hot Plate Type Heaters	0.122	0.122	0.006	1.018	0.054	0.214
Total (tons per year)	1.14	1.14	0.006	1.018	18.58	0.214
Total (pounds per day)	6.26	6.26	0.03	5.58	101.82	1.17
Total (pounds per hour)	0.261	0.261	0.001	0.232	4.243	0.049

Other Calculations

326 IAC 6-3-2 limit:

For sources at or below a process rate of 100 lbs per hour the rate of emission limit is 0.551 pounds of PM per hour.

2.41 is the calculated tons of PM per year (by taking the rate of emissions limit * 8760 hours per year / 2000 pounds per ton.

The limit is above the potential emissions, therefore compliance will be achieved without control.